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File: DWPI

DERWENT-ACC-NO: 1973-16283U

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TITLE: Dewatering sewage sludge - with flocculants introduced on inlet and outlet
sides of plant supply pump

PATENT-ASSIGNEE:

ASSIGNEE

DAVEY PAXMAN & CO LTD

CODE

DAVE

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PATENT-FAMILY:

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INT-CL (IPC): C02C 3/00

ABSTRACTED-PUB-NO: GB 1310491A

BASIC-ABSTRACT:

Sewage sludge is dewatered in a rotary thickener fed by a pump and discharging to the screen of a rotary compression filter. At least two flocculants are added, one into the eye of the pump and the second or others into the pump discharge line. Pref. the first flocculant is polymsd. modified tannin and the second or others a polyacrylamide. The second is fed in immediately adjacent the pump discharge and esp. a third into a metering device upstream of the filter.

TITLE-TERMS: DEWATER SEWAGE SLUDGE FLOCCULATE INTRODUCING INLET OUTLET SIDE PLANT
SUPPLY PUMP

DERWENT-CLASS: A14 A91 D15

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 C1C 22X 230 253 320 400 40X 40Y 423 435 610 61X
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(54) IMPROVEMENTS IN AND RELATING TO THE TREATMENT OF SEWAGE SLUDGE

(71) We, DAVEY, PAXMAN AND COMPANY LIMITED, a British Company, of Standard Ironworks, Colchester, Essex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to the continuous mechanical dewatering of sewage and other sludges in a two-stage, filtration plant of the kind, hereinafter referred to as "the kind described", in which sewage or other sludge fed to the interior of a rotary thickener, constituting an initial dewatering stage, is discharged therefrom in the form of a plug which is then supplied to the screen of a rotary compression filter constituting the final dewatering stage. Plant of the kind described is disclosed in U.S. Patent Specifications Nos. 2,798,424 and 2,798,609, British Patent Specifications Nos. 874648, 891729, 928066, 1,121,657, 1,124,631 and 1,257,470.

It is well-known to treat sludge with flocculants in order to alter its structure sufficiently to make it suitable for mechanical dewatering and one known method consists of adding the flocculants thereto in a specially designed mixing vessel before feeding the sludge to a mechanical dewatering device.

This method of conditioning sludge has a number of disadvantages, the chief of which are the high cost of installing and operating the conditioning equipment and the necessity for controlling the degree of agitation imparted thereby, since if this is too violent the floc will be damaged and if insufficient a suitable floc will not be achieved.

It is the object of the present invention to achieve satisfactory flocculation without suffering any of the above disadvantages and to this end, according to the invention, the sludge being pumped to the first stage of a two-stage, filtration plant is treated with at least two flocculants, the first of which is introduced into the suction eye of the sludge pump and the second and each subsequent one, if used, is fed into the pump discharge line.

In a preferred form of the invention the second flocculant is introduced into the discharge line at a point immediately adjacent to the pump discharge and if a third flocculant is employed this is preferably introduced into a device for metering the admission of sludge into the initial dewatering stage of the filtration plant.

The first flocculant is preferably a polymerised modified tannin whilst the second and, if required, subsequent flocculants are polyacrylamides.

WHAT WE CLAIM IS:—

1. A method of treating sewage or other sludge being pumped to the first stage of a two-stage, filtration plant of the kind described, comprising the addition of at least two flocculants, the first of which is introduced into a suction eye of the sludge pump and the second and each subsequent one, if used, is introduced into the pump discharge line.

2. A method according to claim 1, wherein said second flocculant is introduced into the pump discharge line at a point immediately adjacent to the pump discharge.

3. A method according to claim 1 or 2, wherein a third flocculant is introduced into a device for metering the admission of sludge

into the first stage of said filtration plant.

4. A method according to any one of claims 1 to 3, wherein said first flocculant is a polymerised modified tannin.
- 5 5. A method according to claim 4,

wherein the or each subsequent flocculant is a polyacrylamide.

6. A method according to claim 1 and substantially as hereinbefore described.

HERON ROGERS & CO.

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